

DISTRIBUTION:

Docket file

DR Reading

L Reading

PWR-2 Reading

LMMuntzing

LVGossick

JFO'Leary

AGiambusso

JHendrie

SECY -R

RSBoyd

RCDéYoung

RWKlecker

KKniel

JCook

OGC

RO (3)

MService

MMcCoy

May 1, 1973

50-247

For: The Commissioners

Thru: Director of Regulation (signed) LMM

Subject: ISSUANCE OF FACILITY OPERATING LICENSE TO CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

We have issued Amendment No. 2 to Facility Operating License No. DPR-26 to Consolidated Edison Company of New York, Inc. for the Indian Point Nuclear Generating Unit 2. The license application rating of the facility is 2758 megawatts thermal, but in accordance with the provisions of Amendment No. 2, the facility is restricted to power levels not in excess of 1379 megawatts thermal (50 percent of the rated power level) for testing purposes only.

This amendment to the Indian Point 2 license was authorized by the Atomic Safety and Licensing Appeal Board in its Memorandum and Order dated April 24, 1973. Verification by the Director of Regulatory Operations that Indian Point 2 was ready for testing was received on April 18, 1973.

Original Signed By
E. G. Case

for John P. O'Leary
Director of Licensing

Contact: Karl Knief
Ext. 7317

8111170051 730501
ADOCK 05000247

OFFICE 7317	PWR-2 AGiambusso/Kniel	OGC MKarman	AD/PWRs RCDéYoung	DD-RE AGiambusso	DR JFO'Leary	LMMuntzing
SURNAME						
DATE	4/27/73	4/27/73	4/27/73	4/27/73	4/27/73	4/27/73

MAY 9 1973

50-247
50-3

Files

INSPECTION REPORTS RO-1-MAPP-78, CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. - INDIAN POINT NUCLEAR GENERATING STATION UNITS 1 AND 2

Subject reports were reviewed by Headquarters Materials and Plant Protection Branch staff. The inspections were made to determine the adequacy of the licensee's conformance with the safeguards requirements contained in Title 10, Code of Federal Regulations, Part 70, "Special Nuclear Material," and specific requirements contained in AEC Licenses DPR-5 and DPR-26. The inspection included a thorough review of the licensee's material safeguards control for internal control, records and reports, receipts, and shipments of special nuclear material (SNM), thermal power generation and special nuclear material depletion and/or production. The nuclear fuel inventory was also tested to verify its validity. Specific comments on each unit are as follows:

A. Indian Point Nuclear Generating Unit No. 1

The licensee met most of the safeguard requirements of 10 CFR 70 and DPR-5. They were found in violation of Part 70.51(b)(1) in that Consolidated Edison Company failed to maintain written material control and accounting procedures which were sufficient to enable him to account for all the SNM in his possession under his license. This deficiency was corrected at the direction of Mr. Cobean, Manager, Nuclear Power Generation, by the time the inspectors had left the site. Inasmuch as corrective action has already been taken by Consolidated Edison, it is recommended that the licensee be notified that while he has been in noncompliance, he did take steps to correct the deficiency, and that follow-up action will be taken by the AEC during the next inspection.

B. Indian Point Nuclear Generating Unit No. 2

This was a preoperational inspection, and the inspectors found no items of noncompliance as a result of the inspection.

50-247
50-3
MPP

OFFICE ▶				
SURNAME ▶				
DATE ▶				

Mr. James Devlin had reviewed Consolidated Edison's industrial security plans for Units 1 and 2 during an inspection on March 14, 1973. He found that the licensee was following the industrial security procedures as put forth in his FSAR, and as he agreed to during the in camera sessions. The licensee has submitted an industrial security plan for Indian Point Nuclear Generating Unit No. 3, which is being reviewed by Licensing's Operational Safety Branch. It is their intention that this plan be comprehensive enough to cover all three units, since they will be encompassed by the same fence perimeter, and will make every effort to assure that the licensee's plan will meet all AEC requirements.

It is recommended that the attached letter be sent to the licensee.

Original signed by
H. V. Werner

Harold V. Werner, Staff Assistant
for Engineering
Materials and Plant Protection Branch
Directorate of Regulatory Operations

bcc: M&PPB Reading, w/o rpt
M&PPB File, w/rpt
HThornburg, RO, w/rpt
JMHendrie, L, w/rpt
AGiambusso, L, w/rpt
Docket No. 50-3, w/rpt
Docket No. 50-247, w/rpt
WGMartin, RO-I, w/o rpt
GARlotto, RS, w/rpt

OFFICE ▶	M&PPB:RO				
SURNAME ▶	HVWerner:leg				
DATE ▶	5/2/73				

OFFICIAL USE ONLY

FINAL INSPECTION OF SAFEGUARDS ACTIVITIES
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 1
LICENSE NO.: DPR-5 DOCKET NO.: 50-3
RO:I-MAPP-77

I. INTRODUCTION

1.01 - An inspection of safeguards control over special nuclear material at Indian Point Nuclear Generating Unit No. 1 was made by the Region I Office of Regulatory Operations, Materials and Plant Protection Branch. The inspection covered the period of operation from September 1, 1969 to February 28, 1973, with the field work being done from February 27, 1973 to March 7, 1973.

1.02 - The Indian Point Nuclear Generating Unit No. 1 is a pressurized water reactor supplied by the Babcock & Wilcox Corporation and is located in Buchanan, New York. This reactor has a design capacity of 615,000 kilowatt thermal power, including oil fired super-heater, and 265,000 kilowatt electrical power. The fuel consists of 120 assemblies containing low enrichment uranium dioxide pellets clad in Zircaloy tubes.

1.03 - Fuel cycle number 2 was completed February 11, 1969 and was reported in the prior inspection report, SO-II-26. Fuel cycle number 3 started March 28, 1969 and ran through March 20, 1970. Fuel cycle number 4 started May 20, 1970. The reactor was shutdown after 20 hours operation due to mechanical problems. The reactor began producing power again on February 8, 1971 and ran until December 29, 1972 for refueling. Fuel cycle 5 is scheduled to begin in June 1973.

II. SCOPE

2.01 - The inspection was made to determine the adequacy of the licensee's conformance to requirements contained in Title 10, Code of Federal Regulations, Part 70, "Special Nuclear Material", and specific requirements contained in License No. DPR-5.

2.02 - The licensee's material safeguards controls were reviewed for internal control, records and reports, receipts, and shipments of SNM, thermal power generation and special nuclear material depletion and production. In addition, the inspection team performed a test of the nuclear fuel inventory.

III. CONCLUSIONS

3.01 - The licensee was in non-compliance with Part 70.51(b)(1) for failure to maintain written material control and accounting procedures which are sufficient to enable the licensee to account for the special nuclear material in his possession under the license.

3.02 - The licensee is exempt from the physical protection requirements of 10 CFR 73 since his inventory of enriched uranium, over 20% U-235 is less 5 kilograms of the isotope. The licensee does not possess uranium-233 or plutonium, other than plutonium contained in a neutron source.

IV. DISCUSSION

A. Safeguards Requirements of 10 CFR 70

4.01 - The inspection revealed the status of safeguards requirements of 10 CFR 70 to be as follows:

1. The licensee was not required to submit FMC's or written material control and accounting procedures under the exclusion provision of 10 CFR 70.51(c).
2. Possession and use of special nuclear material have been confined to the locations and purposes authorized in the license as required by 10 CFR 70.41.
3. SNM has not been transferred except to an authorized recipient as required by 10 CFR 70.42.
4. Records or receipts, disposal, acquisition and transfer of all special nuclear material had been maintained as required by 10 CFR 70.51(a).
5. Written material control and accounting procedures had been established as required by 10 CFR 70.51(b)(1). Except as noted in Section 4.12 of this report for plutonium production records.
6. A physical inventory has been conducted as required by 10 CFR 70.51(b)(2).
7. There have been no known losses that required reporting under 10 CFR 70.52.

OFFICIAL USE ONLY

- 3 -

8. Material status reports have been submitted at the frequency required by 10 CFR 70.53. The last report reviewed during this inspection was submitted as of December 31, 1972.
9. Transfer reports on shipments and receipts have been properly executed as required by 10 CFR 70.54.

B. Requirements of the License No. DPR-5

4.02 - The Consolidated Edison Company of New York, Inc. is authorized to possess 1918 kilograms of U-235 and 30 grams of plutonium.

C. Inventory

4.03 - At the time of this inspection, Consolidated Edison had 120 irradiated fuel assemblies in the reactor core and 40 unirradiated fuel assemblies stored in the west failed fuel storage pit. The site inventory also included a plutonium-beryllium neutron source and fission counters containing approximately 6 grams highly enriched uranium.

4.04 - The special nuclear material content of the irradiated fuel was accepted based upon the licensee's depletion/production calculations as applied to the fabricator's data, and as confirmed by the inspection team's calculations. The fission counters and PuBe source were reported at original fabrication values.

4.05 - The licensee maintains written inventory procedures. A review of records indicate these procedures were followed, and that physical inventories were taken at least annually.

D. Inventory Verification

4.06 - The 40 new fuel assemblies in the west failed fuel storage pit were stored in a pit approximately 40 feet deep. A Con Ed employee donned protective clothing and entered this area. He called out serial numbers of the stored fuel which were recorded by the inspection team. These numbers were then compared with Con Ed records and found to agree.

4.07 - The fuel in the reactor core could not be independently verified. This inventory was accepted based on licensee records. The fission counters in the reactor core were also accepted based on record data.

4.08 - The plutonium-beryllium neutron source is used as a calibration source and was identified by serial number.

E. Reactor Thermal Output

4.09 - Reactor heat output is calculated on a monthly basis from continuous and periodic measurements of the system. The most significant factor in the heat balance is boiler feed water flow which is recorded on circular charts and planimetered on a daily basis. The inspection team checked totals to and averages to source documents. No discrepancies were noted. Procedures of the performance group at Indian Point are acceptable. Summary records for thermal output maintained at the site are models of clarity and usefulness for their intended uses.

F. Nuclear Material Depletion and Production

4.10 - The conversion of reactor heat output to uranium depletion/plutonium production is done monthly using tables supplied by the Westinghouse Electric Corporation. These tables are based on computer codes suitable for the fuel used.

4.11 - Until 1972, the performance group at the reactor site supplied reactor thermal output data to the main office of the Consolidated Edison Company in Manhattan. They also prepared a draft copy of the Material Status Report showing receipts and shipments. At the main office, the data on reactor thermal output was used to calculate uranium depletion/plutonium production which was entered on the Material Status Report and forwarded to the AEC. At indefinite intervals, Westinghouse provided revised data on irradiated fuel, based on assays of spent fuel, to the main office of Con Ed. This new data was used to correct prior reported uranium depletion/plutonium production values on the Material Status Report. Unfortunately the new reported value on the Material Status Report was a single number with a footnote advising this single value was a composite number of several factors.

In early 1972, the entire materials management function was centralized at Indian Point and the known records in Manhattan were sent to the reactor site. The performance group has been responsible for all records on special nuclear material since that time.

4.12 - The AEC inspection team used the reactor thermal output data to compute the nuclear material depletion and production data reported to the AEC on the Material Status Reports. There was no difficulty in confirming the values on the two most recent reports (calendar year 1972) which were prepared by the performance group.

Considerable difficulty was encountered in substantiating values reported on Material Status Reports from December 1969 to December 1971. The performance group at Indian Point and the AEC auditor took existing records at Indian Point and recomputed the adjusted values provided by the main office group of Con Ed and were able to reconstruct the reported uranium depletion values reported on the Material Status Reports.

A similar exercise was done for plutonium production values reported on the Material Status Report. It was possible to verify the plutonium values, within narrow limits, for the entire period except for April 1, 1970 to June 30, 1970. To verify this three month period, it would be necessary to create new depletion tables by computer with no assurance that these new values would agree.

Since the uranium values did agree for the entire period under review, and it is impossible to disassociate the plutonium content of spent fuel from the uranium content, the inspection team accepted the licensee's reported data as valid.

As a result of the above problems, the inspection team concluded that the licensee was in non-compliance with Part 70.51(b)(1) for failure to maintain written material control and accounting procedures which are sufficient to enable the licensee to account for the special nuclear material in his possession under the license.

G. Records and Reports

4.13 - The licensee maintains copies of transfer documents as the primary records of external activity. A 100% audit of transfer reports received and shipped had been satisfactorily recorded and reported to the AEC as required. Material Status Reports submitted through December 30, 1972, were all audited and found to have been properly prepared.

OFFICIAL USE ONLY

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 1
MATERIAL BALANCE STATEMENT
PRIVATELY - OWNED ENRICHED URANIUM
AS OF FEBRUARY 28, 1973

	GRAMS	
	<u>TOTAL U</u>	<u>U-235</u>
Beginning Inventory	31,323,756	864,878
Receipts	101,414,968	2,944,451
Shipments	(102,255,474)	(2,635,068)
Burnup	<u>(465,281)</u>	<u>(286,931)</u>
Ending Inventory	<u>30,017,969</u>	<u>887,330</u>

APPENDIX A

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
 INDIAN POINT UNIT NO. 1
 MATERIAL BALANCE STATEMENT
 ION CHAMBERS
 AS OF FEBRUARY 28, 1973

	GRAMS	
	TOTAL U	U-235
Beginning Inventory	6	6
Receipts	-0-	-0-
Shipments	-0-	-0-
Ending Inventory	<u>6</u>	<u>6</u>

APPENDIX B

OFFICIAL USE ONLY

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 1
MATERIAL BALANCE STATEMENT
PRIVATELY OWNED PLUTONIUM
AS OF FEBRUARY 28, 1973

	GRAMS	
	<u>TOTAL Pu</u>	<u>Pu 239 & 241</u>
Beginning Inventory	165,822	141,750
Reactor Production	115,097	90,401
Shipments	<u>(129,749)</u>	<u>(107,556)</u>
Ending Inventory	<u>151,170</u>	<u>124,595</u>

APPENDIX C

OFFICIAL USE ONLY

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 1
MATERIAL BALANCE STATEMENT
PLUTONIUM SOURCE
AS OF FEBRUARY 28, 1973

	GRAMS	
	<u>TOTAL Pu</u>	<u>Pu 239 & 241</u>
Beginning Inventory	16	15
Receipts	16	14
Shipments	<u>16</u>	<u>14</u>
Ending Inventory	<u>16</u>	<u>15</u>

APPENDIX D